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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|-----------------------------|---------------------------------|------------------|
| 09/843,814 | 04/30/2001 | Raghunath Vitthal Chaudhari | 109422 | 9947 |
| 25944 | 7590 | 08/16/2004 | | |
| OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320 | | | EXAMINER PASTERCZYK, JAMES W | |
| | | | ART UNIT 1755 | PAPER NUMBER |

DATE MAILED: 08/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/843,814 | CHAUDHARI ET AL. | |
| | Examiner | Art Unit | |
| | J. Pasterczyk | 1755 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 30 June 2004.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-63 and 88-109 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-63 and 88-109 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>09/08 9/18/01</u> | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

1. The drawings are objected to because figure 2 also appears to be of a conventional apparatus and thus should be labeled “prior art”, and the apparatus shown in figure 6 is nothing more than a commercially available “Rotovap™” solvent evaporator. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

3. The specification is riddled with numerous spelling and grammatical errors. For instance, in the experimental section, the proper spelling is “vacuum” and “deuteration”. Correction is required.

4. The references provided by applicants in a computer search printout filed 9/18/01 will not be made of record since they are not properly presented on a PTO-1449 form. If applicants wish these references to be considered, they should provide copies along with a properly filled out PTO-1449 form.

5. Claims 1-63 and 88-109 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the specific compounds and processes disclosed in the specification, does not reasonably provide enablement for the extremely broad and functional language used in the present claims. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims. The present claims are exceedingly broad in scope, reciting such terms as "solid catalytically active material that is substantially insoluble in organic and aqueous liquid media", a term that would read on any monolithic hydrocarbon cracking catalyst or even Raney nickel. As composition claims, one would expect to be able to find more recitation of actual chemical compounds or products by process; however, the claims as currently couched are essentially all functional, hence one of ordinary skill in the art would not be placed on notice of what is or is not infringing the present claims if allowed as is, nor would one of ordinary skill in the art be able to practice the full scope of the claimed invention as opposed to the disclosed specific examples. Hence, enablement problems abound in the claims as presently written. See *Ex parte Slob*, 157 USPQ 172 (Bd. Pat. App. & Interf. 1967) for a discussion of the pitfalls of functional language.

6. Claims 1-63 and 88-109 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The present claims are riddled with examples of lack of antecedent basis, relative terms undefined in the specification, improper Markush terminology etc. too numerous to mention. For example, throughout the claims the catalytic composition is referred to as “heterogeneous”, yet what is truly heterogeneous is the reaction that uses the catalyst since the catalyst itself is normally a solid that is used in liquid or gas phase reactions.

Obsolete terminology is used throughout the claims in referring to the chemical groups; the current term for the alkaline earth elements is group 2, not IIA. Likewise, the current terms for the scandium through zinc groups are 3-12 respectively. The correct symbol for Angstroms is \AA . In claim 3 “pore surfaces” lacks antecedent basis, and in claim 4 “pores” lacks antecedent basis. In claim 7 *inter alia* it is not clear what is meant by “mechanically robust”, and the correct wording for a closed Markush group throughout all the claims is “selected from the group consisting of X, Y and Z”, not just “selected from”. In claim 10 *inter alia* it is not clear under what conditions the solid is “non-subliming” since many solids sublime at the appropriate combination of temperature and pressure. In claims 11 and 13 *inter alia* “remains as a stable composite solid in gas, liquid and gas-liquid phases” confuses the phases of the composite; can it be only a solid while other phases contacting it are gas or liquid or mixtures thereof? This is not clearly stated and appears to be internally contradictory. In claim 17 “selected independently” would be better phrased --individual--. In claim 18 *inter alia* it is not clear if “anion having two or more negative charges” means that the anion is a zwitterion, that its overall

charge is two minus or below, that the charge on each charge center is two minus or below, or some other meaning. In claim 20 *inter alia* the proper term is --ranges--, not “is ranging”. In l. 5 of claim 20 *inter alia*, M being a catalytic metal atom or an ion of a coordination complex as well as being a particular transition metal atom sounds like a range within a range as well as being incorrect terminology since the overall anionic entity is catalytically active, not just the metal itself. Also in this claim *inter alia*, L and L* cannot be compounds themselves since they are part of another compound; instead they may be a ligand or group. Claims 28, 51, and 57 are use claims and hence fail to further limit the composition claims from which they depend as well as violate the terms of 35 USC 101. In claim 29 *inter alia* “high boiling” is a relative term without clear definition in the specification or claims. In claim 31 *inter alia* it is not clear what is meant by “molecularly well defined”. In claim 32 “pore surfaces” lacks antecedent basis. In claim 33 “pores” lacks antecedent basis. In claim 50 the proper term is “catalytically inactive anionic additive”. In claim 53 *inter alia* it is not clear what is meant in l. 2 by “interacting” as opposed to “reacting”, and there appears to be no step of adding a support; the entire claim is very confusingly worded. On the second page of this claim as well as the other process claims “quaternary ammonium” conflicts with the later recitation of sulfur, phosphorus or arsenic being the Y moiety. Also the alkaline earth elements normally form 2+ cations, not 1+. In claim 54 *inter alia* it is not clear to which reaction this in the dependent claim refers since the independent claims generally have more than one reaction in their steps. In claim 59 *inter alia* it is not clear whether “including” denotes open, closed, or semiclosed Markush language, and “vigorous” is a relative term of degree without clear definition in the specification or claims. Also,

cations are not themselves compounds as the last two lines suggest. In claim 60 it is not clear which reaction is being referred to since there are plural steps in the process. In claim 63 *inter alia* change “solids are” to --is-- for simplicity and clarity. In claim 93, it is not clear how both solvent removal and aging of the suspension are to be accomplished concurrently.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-63 and 88-109 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al., USP 4,994,427 (hereafter referred to as Davis).

Davis discloses the invention substantially as claimed (abstract; col. 2, l. 33-46; col. 3, l. 36-68; col. 4, l. 16-21, l. 35-61; example 1).

Davis lacks explicit disclosure of a composition having an alkaline earth counter ion.

However, Davis does disclose at col. 3, l. 68, that an alkaline earth counter ion is contemplated for this composition.

It would have been obvious to one of ordinary skill in the art to apply that skill to the disclosure of Davis with a reasonable expectation of obtaining a highly-useful catalyst composition and method of making it with the expected benefit of the catalyst having different reactivities in different solvent systems based on the cation chosen for the counter ion in the phosphine ligand.

Art Unit: 1755

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Pasterczyk whose telephone number is 571-272-1375. The examiner can normally be reached on M-F from 9 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached at 571-272-1362. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mark L. Bell
Supervisory Patent Examiner
Technology Center 1700



J. Pasterczyk

AU 1755

8/5/04